Forest Insect Conditions on the

Toiyabe National Forest

1967

This report is an evaluation of a bark beetle problem on the Toiyabe National Forest in 1967. Although the Forest contains a myriad of insect problems most are endemic and do not pose an immediate threat to any particular forest resource. The only exception to this low level of insect activity is a bark beetle infestation on the Las Vegas Ranger District. An evaluation of this insect problem follows:

A roundheaded pine beetle, Dendroctonus adjunctus Blanford

A roundheaded pine beetle infestation in ponderosa pine was evaluation by Bruce Baker in the Charleston Mountain area of the Las Vegas Ranger District, Toiyabe National Forest. In October, an aerial survey was promptly followed by on-the-ground inspection of the infestation. While the beetle has caused occasional pine mortality throughout the area in the past, a substantial increase in tree mortality resulted in 1967.

The Charleston Mountain area is a rather isolated forested area rising out of the Mohave Desert. Due to its proximity to Las Vegas, Nevada, tree mortality in and around established recreation areas is a definite threat to recreational values of the area.

Although the western pine beetle or the mountain pine beetle may very well be present in the Charleston Mountain area, the roundheaded pine beetle was found to be the primary insect attacking ponderosa pine in recreation and other developed areas.

Trees affected are for the most part very old pines typified by open-grown crowns often having dead limbs and occasionally dead tops. Past mortality has been rather scattered but persistent each year with a marked increase in 1967. This recent increase is possibly due to a relatively dry 1966 growing season which could have preconditioned trees to attacks that year.

Research findings indicate that D. adjunctus usually works in conjunction with other species of Dendroctonus to overcome a tree. 1/ Its galleries somewhat resemble those of certain other Dendroctonus species and, consequently, much of the damage by this insect has been attributed to other primary bark beetles. Lacking the presence of other species, D. adjunctus appears more aggressive and frequently initiates primary tree attack.

It has also been noted that the beetles usually overwinter as larvae or adults. Larval activity and egg deposition by adults are resumed as soon as spring temperatures rise. The brood, both larvae and young adults, completes its

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1/ Wood, S. L. 1963. A Revision of the Bark Beetle Genus Dendroctonus Erickson (Coleoptera: Scolytidae) Illustrated. The Great Basin Naturalist, Volume XXIII, Nos. 1-2.

development and seeks new hosts beginning in May or June. Although attacks reportedly continue throughout the summer and into fall, increased flight activity usually occurs in late spring and to a general extent again in the fall. The incidence of such late fall attacks and late spring emergence often masks the aggressiveness of this beetle. A relatively low number of adults is required for a successful tree attack. Trees selected for attack are usually weakened individuals above 10" d.b.h.

In studies where the mountain pine beetle (D. ponderosae) was found to be numerous, D. adjunctus was often restricted to the lower three feet of the bole. Its normal habitat is within 12 feet of the ground. Beetles found on the Las Vegas District were within this latter zone. The number of generations usually varies from one complete and a partial second generation per year to one generation in two years.

The aerial damage survey was conducted over the entire District (see enclosed map). Only those trees in advanced stages of obvious crown discoloration could be mapped from the air. Subsequent ground observations conducted with the District Ranger revealed trees in and near recreation areas and along roads that were undergoing a slow and inconspicuous color transition from healthy green to very pale yellow foliage. Needles would then fall from limbs causing a progression of branch mortality until an entire tree was dead. Scattered dying trees could number as many as 400.

Although affected trees are scattered over much of the District, epicenters of the infestation occur in Lee and Kyle Canyons (see enclosed map).

Due to the slow attrition of individual trees of high esthetic value, individual tree removal of affected trees in developed areas is desirable.

As the infestation experiences a definite increase, the beetle population may well be able to perpetuate itself at a higher than normal level. Trees in and near developed areas require removal from a nuisance and safety standpoint. An additional benefit derived from such tree removal is a reduction in the reproductive potential of the population. To achieve this, however, trees must be felled and them promptly utilized, burned, or treated chemically prior to beetle emergence.

It is, therefore, recommended that attacked trees in and around recreation areas and facilities as well as along roads be removed and beetles in such trees be prevented from emerging.

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